19th Global Chemistry, Chromatography & Spectrometry Conference

March 20-21, 2019 | New York, USA

ACCEPTED ABSTRACTS CHEMICAL SCIENCES JOURNAL 2019, VOLUME 10 | DOI: 10.4172/2150-3494-C1-033

Chemical composition and radical scavenging (anti-oxidant) efficacy of the leaf of *Terminalia catappa* Linn

Mustapha A Tijjani
University of Maiduguri, Nigeria

Medicinal plants have been identified and used throughout human history to treat aliment and diseases. Plants have the ability to synthesize a wide variety of chemical compound. Chemical compounds in plants mediate their effects on the human body by binding to receptor molecules present in the body; *Terminalia catappa* Linn (Indian almond) is a Combretaceae plant (tropical almond family) Fresh leaf of *Terminalia catappa* was collected from Bolori ward Maiduguri Borno state and it was identified by Professor S. S. Sunusi Department of Biological Science Faculty of Science, University of Maiduguri. One thousand grams (1000g) of the powdered leaf of *Terminalia catappa* was extracted with methanol using cold infusion (maceration) method. Eighty-three point eight two grams (83.82g) of the dark green in color gummy in texture of methanol crude extract was obtained, which was further partitioned with n-hexane, ethyl acetate, n-butanol and water to give n-hexane portion (1.638% W/W), dark green in colour, oily in texture, ethyl acetate portion (0.075% W/W), black in colour, gummy in texture, n-butanol portion (0.777% W/W), brown in colour, oily in texture and finally aqueous portion (2.997% W/W), dark brown in colour, powdered in texture. The methanol extract showed the percentage inhibitions of 98.25 at 10ug/ml 97.40 at 20µg/ml 96.94 at 30µg/ml 96.63 at 40µg/ml and 97.10 at 50µg/ml and all the partitioned portions exhibited anti-oxidant activities. The concentration levels of macro-elements (Ca, Mg, Na, K) and micro-elements (Cd, Cu, Ni, Zn, Fe, Mn) were analyzed using Atomic Absorption Spectrophotometer and the anions (Cl-, NO3-, PO43-, and SO42-) were estimated using a smart spectrophotometer. The leaf of *Terminalia catappa* indicated the presence of calcium (19.68µg/ml), cadmium (0.12µg/ml), copper (6.84µg/ml), iron (10.67µg/ml), potassium (18.90µg/ml), magnesium (10.27µg/ml), manganese (1.27µg/ml), sodium (15.30µg/ml) nickel (1.00µg/ml), zinc (4.17µg/ml), chloride (0.72µg/ml), nitrate (46.00µg/ml), phosphate (70.00µg/ml) and sulphate (227.33µg/ml). However, only phosphate and sulphate exceeded the permissible limit of the world health organization (WHO) standard. Purification of the compound was done by using column and thin layer chromatography method. After pooling and recombination with a different solvent system of the n-butanol extract, three compounds TCA, TCB, and TCC were obtained with melting points TCA (286.00-287.00), TCB (278.00-279.00) and TCC (260.00-262.33). All the melting points were shaped and uncorrected. The gas chromatography-mass spectrometry of the compound TCA revealed the presence of fatty acid derivatize such as octadecanoic acid 4-hydroxybutyl ester, tetradecanoic acid 2-hydroxyl, pentatonic acid, 2,2 4-trimethyl-3-carboxy isopropyl, isobutyl ester, octadecanoic acid (2-phenyl 1-3-dioxolan-4-yl) methyl ester cis. The methanol extract showed promising antioxidant activities at various concentrations when compared with the partitioned portions.

mustaphatijjani22@yahoo.com